

## **REMARKS/ARGUMENTS**

In response to the Office Action dated June 5, 2007, Claims 1-7 and 18-25 remain pending for prosecution with Claims 1 and 18 being independent.

### **I. Claim Rejections - 35 U.S.C. § 103**

#### **A. Improper Rejections**

Applicant submits that the new grounds of rejection contained in the present office action are improper in that Applicant did not amend any of Claims 1-7 and 18-25 in its last response. There was no need for the Examiner to conduct a new search. In connection with this response, Applicant is submitting a Petition to Invoke Supervisory Intervention. As set forth in that petition, Applicant submits that the Examiner is impermissibly conducting a piecemeal examination. Moreover, the previous rejection under 35 U.S.C. § 103(a) over the admitted prior art (APA) in view of U.S. Patent No. 5,092,533 to Gangemi has apparently been withdrawn without any reasons or statements therefore. The Examiner is required make clear statements as to the withdrawal of rejections and the reasons why the rejections are being withdrawn. Nonetheless, Applicant will still respectfully address the current rejections.

#### **B. Obviousness**

When determining the question of obviousness, underlying factual questions are presented which include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art at the time of the invention; (3) objective evidence of nonobviousness; and (4) the differences between the prior art and the claimed subject matter. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). Moreover, with regard to the last prong of the *Graham* inquiry, “[t]o determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look to interrelated teachings of

multiple patents; to the effects of demands known to the design community or present in the marketplace; and to the background knowledge possessed by a person having ordinary skill in the art. To facilitate review, this analysis should be made explicit.” KSR International v. Teleflex Inc., 127 U.S. 1727 (2007).

Applicant does not contest that most of the references cited and relied on by the Examiner have at least marginal pertinence to the particular problem in that the references disclose membrane winders. Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1535, 218 USPQ 8781, 8786 (Fed. Cir. 1983).

The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art. Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 962, 1 USPQ2d 1196, 1201 (Fed. Cir. 1986). The level of ordinary skill in the art of roofing materials may be determined by looking to the references of record. In re GPAC, Inc., 57 F.3d 1573, 35 USPQ2d 1116 (Fed. Cir. 1995). The references of record in this case reveal that a moderate level of sophistication in membrane manufacturing is associated with one of ordinary skill. Thus, Applicant submits that, as substantiated by the cited references, those with some experience in the membrane manufacturing industries would most likely be a person with ordinary skill in this field of endeavor.

With respect to objective evidence of nonobviousness, Applicant submits that the record supports the conclusion that there are long-felt but unsolved needs met by the present invention. The present invention is directed to the particular problem of providing an apparatus and method for automating the process of winding a finished waterproofing membrane product. By this apparatus and method, downtime associated with manually cutting and taping the edges of the waterproofing membrane is reduced and requires one less operator for the winding process.

Thus, the subject invention provides a significant improvement and advantage over any of the known prior art. The above-described features represent solutions to long felt needs in the membrane manufacturing industry that could not be met by the known prior art.

Finally, prima facie obviousness requires that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references. This motivation-suggestion-teaching test informs the Graham analysis. “To reach a non-hindsight driven conclusion as to whether a person having ordinary skill in the art at the time of the invention would have viewed the subject matter as a whole to have been obvious in view of multiple references,” there must be “some rationale, articulation, or reasoned basis to explain why the conclusion of obviousness is correct.” In re Kahn, (Fed. Cir. 2006). The recent *KSR International* decision by the Supreme Court has not eliminated the motivation-suggestion-teaching test to determine whether prior art references have been properly combined. Rather, in addition to the motivation-suggestion-teaching test, the Court discussed that combinations of known technology that are “expected” may not be patentable. Stated in the affirmative, therefore, combinations are nonobvious and patentable if unexpected. In the present application, no single prior art reference nor any combination thereof (legitimate or otherwise) meets the claimed limitations of Applicant’s invention.

### **C. Rejection of Claims**

Claims 1-3, 6, 7, 18-20, and 23-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of U.S. Patent No. 4,711,405 to Niskanen. Claims 4 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen and U.S. Patent No. 3,814,342 to Fujiwara. Claims 5 and 22 were

rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara and U.S. Patent No. 5,092,533 to Gangemi. Claims 2, 3, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen and Rodriguez. Claims 4 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara, and Rodriguez. Claims 5 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Niskanen, Fujiwara, Gangemi and Rodriguez. For the following reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Independent Claim 1 recites an apparatus for automated finishing winding of a membrane section having a leading edge and a width, the apparatus including at least one motorized pull roll for feeding the membrane section into a finishing product winding machine, a mandrel disposed proximal to an output region of the finishing product winding machine and adapted to receive a core, an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to the core, and a guide to index the leading edge of the membrane section to the core.

Independent Claim 18 recites an apparatus for automated finishing winding of a membrane section having a leading edge and a width, the apparatus including at least one motorized pull roll for feeding the membrane section into a finishing product winding machine, a mandrel disposed proximal to an output region of the finishing product winding machine and adapted to receive a core, an automated adhesive applicator configured for traversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to the width of the membrane, and a guide to index the leading edge of the membrane section to the core.

The Office Action asserts that the APA teaches that it is known to form a waterproof membrane from a polymer film base onto which an asphaltic material is applied to one side of the polymer base. After the application of the asphaltic material to the base, a top film is applied to the waterproof material thereby sandwiching the waterproof material between the top film and the base sheet. The waterproof membrane so formed is then cooled, accumulated and fed to a winder. Typically, the membrane is cut in half longitudinally prior to being wound for storage at the winder where the two parallel membranes are wound onto adjacent paper cores. The APA is asserted to teach that the winding operation is a manual one wherein the leading edge of the membrane extending from the winder pull rolls is hand-taped or otherwise secured to the core. Upon completion of the winding of the membrane for storage, the trailing edge is cut manually and the trailing edge is then secured to the roll to prevent unwinding of the same manually. The Office Action admits that the APA fails to teach apparatus for automatically applying an adhesive to the core or along the width of the membrane wherein the applicator traverses the core parallel to the axis of the core.

As stated in the "Background of the Invention" section of the present application, "[t]he production of waterproofing membranes is a multi-part process." A "polymer film base sheet is unwound continuously from the roll and fed through a waterproofing applicator." After waterproofing, the "waterproof membrane product is cooled, accumulated and fed into a winder." "Typically, in the large-width waterproof membrane production process . . . the membrane is cut in half longitudinally at a centerline thereof prior to being wound up for storage. The two parallel membrane sections are then wound onto adjacent paper cores, or a core of other suitable material. In current state of the art of large-width waterproofing membrane production systems, the paper cores . . . are manually fitted onto the mandrel of the finished product winder.

The leading edge of the membrane extending from the winder pull rolls is hand taped or otherwise secured to the core. Once the leading edge is secured to the core, the winder winds the membrane into rolls of various lengths depending on which product is being processed. Upon completion of the roll, the trailing edge may be taped to the roll to prevent unwinding of the finished rolled product. The roll is removed from the finished product winder and new cores are manually fitted onto the winder mandrel, and thus the process may begin again.”

The description of the background of the present invention is the “Admitted Prior Art” cited in the Office Action. Applicant, however, respectfully submits that the APA is nothing more than a part of the background of the unsolved need that is met by Applicant’s claimed invention, namely, providing an automated winding process for a waterproofing membrane thereby reducing the time and labor expense of creating the rolled membrane. Further, downtime associated with manually cutting and taping the edges of the waterproofing membrane is reduced while requiring one less operator for the winding process. The APA had no knowledge of the unsolved problem associated with the present invention as shown by the fact that it does not teach or suggest: (1) apparatus for automated finishing winding of a membrane; (2) a mandrel disposed proximal to the output region of the finishing product winding machine and adapted to receive a core; (3) an automated adhesive applicator configured for transversing at least a portion of the length of the core parallel to the axis thereof to apply an adhesive material to the core; or (4) a guide to index the leading edge of the membrane section to the core. It is also acknowledged in the Office Action itself that the APA does not teach or suggest apparatus for mechanically securing the leading edge as well as severing the web to create the trailing edge and application of the trailing edge to the roll. Therefore, the APA contains no explicit or implicit teaching that is actually relevant to the present claimed invention. Such objective

evidence of nonobviousness must be considered if presented. Pentech, Inc. v. Graphic Controls Corp., 776 F.2d 309, 315, 227 USPQ 766, 770 (Fed. Cir. 1985).

In light of the acknowledged failure of the APA to teach or suggest all of the elements of Applicant's claimed invention, the Office Action further asserts that the secondary reference to Niskanen teaches the attachment of a leading end of a web to a core in a web winding operation by applying adhesive to the core with a device which traverses the core located where the core was located. More specifically, it is asserted that Niskanen teaches that those skilled in the art would have employed an applicator head which was associated with a body part that traverses the length of the core along direction A to apply adhesive to the core tube as shown in Figures 1 and 2. Further, the reference is asserted to teach that this was provided in order to provide a mechanical means for provision of the adhesive application that would have facilitated the quick and speedy placement of the web upon the core for winding the web thereupon. Further, the processing of the device therein is asserted to be useful for the application of the adhesive upon the web whereby the end (the tail) of the web is able to be secured to the completed roll of material. Therefore, it is concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate an applicator in accordance with the device of Niskanen in the system for winding a waterproof sheet material as the sheet material was known to have been secured to the core with adhesive and the end of the roll was likewise known to have been secured with an adhesive and one skilled in the art would have desired to automate the attaching operation because this would have eliminated the need for manual labor associated with securing the ends of the sheet material. Applicant respectfully traverses these assertions.

Niskanen teaches a method and apparatus for fixing the end of a web on a core tube in a web reeling machine. In particular, Niskanen teaches a web reeling machine including a pair of spaced parallel carrier rolls adapted to support the core tube around which the web is to be wound. A web end fixing apparatus situated below the carrier rolls of the reeling machine is also provided. An adhesive agent applicator is arranged to be movable between the carrier rolls in the transverse cross-machine direction of the reeling machine whereupon a line of adhesive agent is applied to the underside of the core tube beginning at one transverse end of a longitudinal slicer and moving transversely to apply a uniform line of adhesive agent to the underside of the core tube. In order to prevent the adhesive applicator head from causing the core tube to be lifted up from its position between the carrier rolls, a depressor roll is provided over the core tube prior to initiation of the application of the adhesive agent to the core tube.

Like the APA, Niskanen fails to teach or suggest all of the elements of the claimed invention. First, Niskanen fails to teach or suggest a mandrel disposed proximal to an output region of the finishing product winding machine and adapted to receive a core. Rather, Niskanen teaches that the core tube is disposed between and above the pair of spaced parallel carrier rolls which are adapted to support the core tube and below a depressor roll. Niskanen's web end fixing apparatus is situated below the carrier rolls for applying a line of adhesive agent on the underside of the core tube. The Examiner's proposed combination of the APA and Niskanen would require that Niskanen's core tube be moved from atop and between the two carrier rolls to a location proximal the output region of the finishing product winding machine in order to meet the terms of the present invention as claimed. This combination would also require that Niskanen's web end fixing apparatus be moved from below the carrier rolls to a location proximal the output region of the winding machine in order to traverse the core for applying

adhesive thereon. However, moving Niskanen's core tube and web end fixing apparatus would destroy Niskanen's ability to prevent the applicator head from applying the adhesive agent with too much force and lifting the core tube because the depressor roll would no longer be above the core tube to urge the core tube back into place. Moreover, contamination of the carrier rolls would be possible since the core tube would no longer be held in place with respect to the carrier rolls during adhesive application. Furthermore, both the APA and Niskanen fail to teach or suggest a guide to index the leading edge of the membrane section to the core. There is no teaching whatsoever in the APA of this element of Applicant's claimed invention. In Niskanen, it is the carrier rolls and not a guide that aid in application of the web to be wound onto the core tube. The Examiner's proposed combination would therefore destroy the Niskanen reference and render it inoperable for their intended purpose. See Ex Parte Hartmann, 186 USPQ 366 (POBA 1974). Moreover, the proposed combination not only requires a substantial reconstruction and redesign of the elements of Niskanen, but it also completely changes Niskanen's principles of operation. See In re Ratti, 270 F.2d 810 (CCPA 1959).

In determining whether obviousness is established by the teachings of the prior art, "the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." Cable Electric Products, Inc. v. Genmark, Inc., 770 F.2d 1015, 1025, 226 USPQ 881, 886-887 (Fed. Cir. 1985); In re GPAC, 35 USPQ at 1123. To invalidate claimed subject matter for obviousness, the combined teachings of the prior art references must suggest, expressly or by implication, the improvements embodied by the present invention. In re Sernaker, 702 F.2d 989, 217 USPQ 1 (Fed. Cir. 1983).

"In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based on the prior art." In re Fritch, 23

USPQ2d 1780, 1783 (Fed. Cir. 1992). “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined *only* if there is some suggestion or incentive to do so.” ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

As stated above, the Office Action acknowledged that the APA does not contain within its four corners a teaching adequate to support the obviousness rejection. Niskanen also fails to teach or suggest all of the elements of Applicant’s claimed invention. Similarly, the references to Fujiwara, Gangemi, and Rodriguez fail to teach or suggest a mandrel disposed proximal to an output region of the finishing product winding machine or a guide to index the leading edge of the membrane section to the core. The Office Action has therefore failed to demonstrate the suggestion or motivation, present either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings as required by the first criteria of obviousness. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 16 USPQ2d 1430 (Fed. Cir. 1990). Since Niskanen fails to teach or suggest Applicant’s invention as claimed, Applicant respectfully submits that the combination of the APA and Niskanen is improper and fails to teach or suggest the present invention. Applicant also submits that, since the primary combination of APA and Niskanen fails to teach or suggest a mandrel disposed proximal to an output region of the finishing product winding machine or a guide to index the leading edge of the membrane section to the core, and the secondary combinations of Fujiwara, Gangemi and Rodriguez also fail to teach these

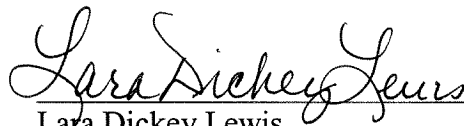
elements of Applicant's claimed invention, independent Claims 1 and 18 and the claimed dependent therefrom are nonobvious under 103(a).

## **II. Conclusion**

If any issue regarding the allowability of any of the pending claims in the present application could be readily resolved, or if other action could be taken to further advance this application such as an Examiner's amendment, or if the Examiner should have any questions regarding the present amendment, it is respectfully requested that the Examiner please telephone Applicant's undersigned attorney in this regard. Should any fees be necessitated by this response, the Commissioner is hereby authorized to deduct such fees from Deposit Account No. 11-0160.

Respectfully submitted,

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